

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (cancelled)

2. (currently amended) ~~The method of Claim 1,~~ A living eye judging method comprising:

a first step of obtaining an image captured by shooting a subject with illumination coaxial with an optical axis of a camera; and

a second step of judging whether an eye included in the image is a living eye or not based on luminance in a pupil region of the eye in the image,

wherein in the second step, the eye is judged as a living eye when a difference in luminance between in the pupil region and in an iris region or a luminance ratio of the pupil region to the iris region is larger than a threshold value.

3 – 8. (cancelled)

9. (currently amended) ~~The method of Claim 8,~~ A living eye judging method comprising:

a first step of obtaining a first image captured by shooting a subject with illumination coaxial with an optical axis of a camera and a second image captured by

shooting the subject with illumination having an optical axis different from the optical axis of the camera; and

a second step of judging whether an eye included in the first and second images is a living eye or not based on luminance in pupil regions of the eye in the first and second images,

wherein the second step includes the steps of:

obtaining a first luminance difference, which is a difference in luminance between the pupil region and an iris region in the first image, and a second difference, which is a difference in luminance between the pupil region and an iris region in the second image; and

judging the eye as a living eye when an absolute value of a difference between the first luminance difference and the second luminance difference is larger than a predetermined threshold value.

10. (currently amended) ~~The method of Claim 8,~~ A living eye judging method comprising:

a first step of obtaining a first image captured by shooting a subject with illumination coaxial with an optical axis of a camera and a second image captured by shooting the subject with illumination having an optical axis different from the optical axis of the camera; and

a second step of judging whether an eye included in the first and second images is a living eye or not based on luminance in pupil regions of the eye in the first and second images,

wherein the second step includes the steps of:

obtaining a first luminance ratio, which is a ratio in luminance of the pupil region to an iris region in the first image, and a second luminance ratio, which is a ratio in luminance of the pupil region to an iris region in the second image; and

judging the eye as a living eye when a ratio of the first luminance ratio to the second luminance ratio is larger than a predetermined threshold value.

11 – 12. (cancelled)